

## ABSTRACT

A method of improving speaker sound quality in a vehicle by controlling a speaker's angle and sound pressure level output. Piezo-electric elements installed on seats are used to detect the number and positions of passengers, and simultaneously, 5 ultrasonic sensors mounted at left and right lower ends of the roof are utilized to detect ear positions of passengers. A memory table describing the recommended angle and sound pressure level output for each standard sound range is used to determine speaker angles and sound pressure level outputs. The speakers are then adjusted according to the memory table data. The number and positions of passengers are detected at 10 intervals to determine whether a change of number and/or positions requires the speakers to be readjusted.